

BRIEFING REPORT

Tanzania final mixed methods evaluation report summary

External evaluation of mobile phone technology-based nutrition
and agriculture advisory services in Africa



The mNutrition intervention in Tanzania

mNutrition was a five-year global initiative supported by the Foreign, Commonwealth and Development Office (FCDO), organised by Groupe Spéciale Mobile Association (GSMA), and implemented by in-country mobile network operators (MNOs) and third-party providers. It sought to use mobile technology to improve the health and nutritional status of children and adults in low-income countries around the world. The nutrition content of the programme aimed to promote behaviour change around key dietary and child feeding practices likely to result in improved nutritional health within a household.

In Tanzania, mNutrition was implemented through the 'Healthy Pregnancy, Healthy Baby' (HPHB) SMS (text messaging) programme, which was part of the Wazazi Nipendeni mHealth platform. The programme was run by

the mHealth Tanzania-PPP, which was initiated in 2012 by the Ministry of Health and Social Welfare, with financial support from the US Government's Centers for Disease Control and Prevention (CDC). Wazazi Nipendeni targeted pregnant women and mothers of young children, as well as their partners (husbands, etc.). It is available nationally and on all phone networks.

The HPHB SMS service sent free text messages in Swahili on a range of pregnancy and early childhood issues. Nutrition was a small component of the original HPHB SMS service but was extended substantially with the addition of the mNutrition content (approximately 300 nutrition messages). The resulting product is referred to as Wazazi Nipendeni in this brief.



This brief provides a summary of the [Tanzania final mixed methods evaluation report](#) which presents the final findings from the evaluation structured around the evaluation questions. It draws on evidence from each methodological component to address each question as comprehensively as possible. The report deliberately presents the results in a way that is accessible to, and actionable for, non-technical audiences, including policymakers. In-depth technical and methodological details and discussions are included in the [detailed method-specific reports](#).



Evaluation design

A consortium of researchers from Gamos, Institute of Development Studies (IDS), and International Food Policy Research Institute (IFPRI) was contracted by FCDO to undertake an impact evaluation of Wazazi Nipendeni in Tanzania. The objectives of the evaluation were to assess the impact, cost-effectiveness, and commercial viability of the service. The field data collection for this evaluation covered the period from October 2016 until April 2019. The evaluation used a theory-based mixed methods approach with three interlinked components, as follows:

- ▣ A **quantitative impact evaluation** that employed a randomised control design to determine the causal effect of the programme on dietary diversity, infant and young child feeding (IYCF) practices, and child anthropometry. The quantitative team conducted large-scale household surveys at the start of the programme implementation and two years later, both in treatment communities, which received door-to-door offers to sign up to the service, and in control communities, which did not receive such offers but were still able to access Wazazi Nipendeni.
- ▣ A **qualitative impact evaluation**, which consisted of three qualitative data collection rounds (i.e. an initial qualitative exploratory study, in-depth case studies at midline, and a rapid explanatory qualitative follow-up study) and aimed to provide understanding of the context, underlying mechanisms of change, and implementation process of Wazazi Nipendeni.
- ▣ A **business model and cost-effectiveness evaluation**, which employed stakeholder interviews, commercial and end user data, document analysis, and evidence from the quantitative and qualitative evaluations to generate a business model framework and to estimate the wider imputed benefits from the value-added service (VAS) for the range of stakeholders involved.



Main findings and recommendations

3.1

Effectiveness of Wazazi Nipendeni in reaching mothers and pregnant women

The evaluation found that the reach of Wazazi Nipendeni was lower than expected. This limited reach can be explained by shortcomings in the available supportive infrastructure (e.g. considerable gendered barriers to access to mobile phones in rural Tanzania, difficult electricity access, and multi-SIM-card behaviour with frequent loss of SIM cards), very limited sharing of the content of Wazazi Nipendeni, issues in the implementation (e.g. users never received Wazazi Nipendeni or the service was suddenly discontinued without obvious reason), and issues in the design of Wazazi Nipendeni (e.g. users mistook messages for spam because they had unclear sender details, lack of human support to encourage continuous engagement). Mobile phone-based services can also generate new inequalities: very poor mothers who could not afford a phone or had limited/no access to a phone were often excluded from the service. However, it should also be highlighted that both mothers and fathers who successfully received Wazazi Nipendeni messages usually read the majority of the messages. This suggests that the content of the Wazazi Nipendeni messages was not to blame for the low reach.

Based on the evaluation findings, to optimise the reach of a mobile phone-based advisory service such as Wazazi Nipendeni the following recommendations should be considered:

- The availability of supportive infrastructure is an important requirement to enable a mobile phone-based information service to effectively reach the intended target group in a chosen context. This includes sufficient autonomy of the target group over the access to a mobile phone (i.e. access is not controlled and restricted by the phone's owner) or ownership of a mobile phone (especially among women), and easy access to electricity to charge the mobile phone (without long down times due to lack of electricity or lack of money to pay for electricity). If these requirements are not met or are not met for a large proportion of the intended target group, alternative modes of content delivery (e.g. via radio or community outreach), or blended approaches (e.g. radio and community worker), may have a wider reach and be more inclusive.
- Tying a mobile phone-based service to one specific SIM card in a context in which people frequently manually switch between multiple SIM cards can pose a barrier to the effective reach of a mobile phone-based information service. This is because the rate of SIM card loss is often high and messages may be missed because another SIM card is in use. Enabling users to access the service using multiple SIM cards may increase long-term engagement.
- To ensure sustained engagement with a mobile phone-based service such as Wazazi Nipendeni it is important that users are made fully aware of the conditions of use (e.g. access to the service is linked to one specific SIM and MNO, and changing one or both of these will mean discontinuation of access to the mobile phone-based service). As part of this, users should also be informed how to re-subscribe to the service if they wish to.

- Text messages can be an effective delivery modality for information in contexts with high levels of literacy and one commonly spoken language (as long as the target group successfully receives the messages and there are no other barriers to overcome).
- Peer-to-peer sharing of the content could increase the reach of the mobile phone-based service considerably, including to mothers who are currently excluded (e.g. because they cannot afford a mobile phone or do not have access). However, the qualitative evaluation suggests that sharing does not happen frequently. Wazazi Nipendeni could experiment with approaches to actively encourage message sharing (e.g. by sending reminders to share and highlighting the benefits of sharing, such as better well-being of the entire community).
- In a context with high levels of unwanted mobile spam, a clearly identifiable sender name (e.g. 'Wazazi Nipendeni') can help prevent text messages from being mistaken for spam and thus being deleted without being read.
- Interpersonal contact with people who are perceived as credible (e.g. health workers) is important to build initial trust in a mobile phone-based service, and can motivate mothers/their households to sign up.
- Adding human support features to mobile phone-based services is likely to increase reach, long-term trust in the credibility of the messages, and sustained engagement. This could include interpersonal contact with promoters/outreach workers and implementation of a well-functioning expert call centre.



Impacts of Wazazi Nipendeni on nutrition outcomes

Based on the quantitative impact evaluation, access to Wazazi Nipendeni had small positive impacts on IYCF knowledge among men and women (statistically significant only among men; men answered 1.7 percentage points more IYCF knowledge questions correctly than control group males) and on dietary diversity among children and women (children aged 6–23 months were more likely to meet the minimum acceptable diet threshold by 6.9 percentage points and women were more likely to meet the threshold for minimum dietary diversity (MDD) by 3.9 percentage points).

However, these positive impacts did not translate into an improvement in nutritional status among children. The limited impact of Wazazi Nipendeni can in part be explained by the low reach and very limited sustained engagement with the service, as well as the contextual barriers that prevented families from translating Wazazi Nipendeni advice into practice (most importantly, the lack of financial resources).

- To increase the impact of a mobile phone-based service such as Wazazi Nipendeni and enable poor families to act on the messages, the service should be joined up with other ongoing interventions that help poor families to deal with poverty (e.g. social protection programmes).

Despite these disappointing overall impact findings, quantitative and qualitative data suggest that mothers/fathers who had access to Wazazi Nipendeni made at least some changes in their IYCF and caring practices, as well as the foods they ate themselves and served to their families. The types of changes made varied greatly and depended on the financial circumstances, capacities, and contexts of the households.

The evaluation findings also suggest that offering Wazazi Nipendeni positively influenced females' and males' use of mobile phones. In particular, women (who often only had limited and closely monitored access to mobile phones in Iringa Region) were significantly more likely to have used mobile phones (e.g. women were more likely to make calls – by 5 percentage points). This suggests that services such as Wazazi Nipendeni might help to bridge the digital gender gap by convincing husbands of the benefits of allowing their wives to access mobile phones more freely (i.e. to read Wazazi Nipendeni messages that, if acted upon, could benefit the well-being of the family).

Process of content development for Wazazi Nipendeni

The evaluation found high levels of overall acceptance of the content of Wazazi Nipendeni among the subsample of mothers/fathers that used the service. Overall, users perceived message content as easy to understand, useful, and relevant. They appreciated the non-judgemental tone of the messages and the fact that the content was tailored towards the specific stage of their pregnancy or age of the child. Messages were especially valued in contexts in which access to formal health and nutrition advice was limited (e.g. in contexts with overcrowded health facilities in which health workers have little time to provide advice) and by individuals who were excluded from formal services (e.g. due to work commitments or being unmarried). While the quantitative data suggest that both male and female users of Wazazi Nipendeni perceived the messages as relevant and useful, the qualitative data indicate that fathers' perceptions of the usefulness of the messages were mixed, with some men perceiving the messages as highly useful and others as not useful. Trust in the credibility of the content of the service was generally high. Nevertheless, not all content was perceived as equally relevant and the evaluation also suggests some potential areas for improvement:

- Most Wazazi Nipendeni users were interested in and receptive to practical, context-specific advice that complemented theoretical high-level advice that they had received from other sources (mainly government health workers). Given their financial constraints, content that recommended, for example, the purchase of animal-sourced foods and fresh fruit was often perceived as less relevant, as this was not an option that was available to many poor households. Future interventions should focus on providing practical, low-cost, and context-specific advice that is actionable and achievable within resource-poor contexts (rather than mainly reinforcing

existing high-level, generic knowledge).

- While mobile phone-based messages might be an effective mode of delivery for information on IYCF practices, they cannot help users to develop the skills to put them into practice. For example, women usually need intensive and interpersonal support in learning optimal breastfeeding practices. Wazazi Nipendeni messages could be strengthened by actively encouraging mothers to visit health workers for support in developing skills. Another option might be to complement text messages with recorded video messages.
- The information needs of mothers and their families changed dynamically and they frequently looked for information that would help them to tackle individual, acute nutritional and health problems. Introducing two-way communication channels (e.g. a call centre or interactive dialogues) could enable mothers to actively seek the information they need at the time they need it.
- First-time parents and experienced parents with previous children have different information needs and gaps. To ensure that the Wazazi Nipendeni content is relevant for all types of parents, different sets of messages to address each group's specific needs should be considered.
- The content of the Wazazi Nipendeni messages needs to be updated regularly to remain relevant, reliable, and useful. Funding, as well as responsibilities, for regular content reviews and updates of the messages needs to be planned for from the beginning, in order to maintain a relevant service throughout.
- Messages that are tailored towards each stage of pregnancy and early childhood can inadvertently raise suspicion in contexts in

which pregnancy and early childhood are perceived as private family issues. Similarly, poor tailoring of the content of, and badly timed, Wazazi Nipendeni messages may have quickly resulted in frustration with and disengagement from the service, as users perceived the content to be less useful and relevant. Careful and individualised

profiling during the initial registration process and detailed explanation of the service (preferably by trusted individuals such as health workers) is vital to build trust and to ensure continued engagement.

3.4

Mobile phone-based services for behaviour change

Several features give mobile phones an advantage over ‘traditional’ channels for behaviour change communication:

- Mobile phones can provide tailored and time-sensitive information (e.g. specific information for each week during pregnancy) more effectively and with less effort than most other information sources, even in remote, inaccessible settings (as long as there is sufficient network coverage and access to mobile phones).
- Mobile phone-based text messages can convey sensitive information related to pregnancy and early childcare more privately than health workers often can do (especially in overcrowded health facilities with no space for private conversations). This is appreciated especially by first-time parents, who often lack the confidence to ask questions.
- Mothers often struggled with multiple demands on their time (including household, care commitments, and paid work outside the home) and were therefore unable to attend health clinics regularly (e.g. for child growth monitoring). Wazazi Nipendeni’s mobile phone-based information was valued as it could be read flexibly whenever and wherever mothers had time (as long as they had access to the mobile phone).
- Frequent Wazazi Nipendeni text messages satisfied mothers’ needs for continuous reassurance, support, and feedback from a credible, trusted source; this need could

usually not be adequately addressed by public health workers, who saw mothers only infrequently and often worked under extreme time pressure. To ensure Wazazi Nipendeni messages effectively address mothers’ needs for continuous support (especially during critical times, such as shortly before and after birth or during initiation of breastfeeding) messages need to be sent out with a reliable frequency (e.g. several times a week).

- In a context of overcrowded and understaffed public healthcare services, mobile phone-based information services can offer a low-cost mechanism for reaching mothers (and fathers) more frequently. This can help to strengthen the existing healthcare system.

There was also one major shortcoming of Wazazi Nipendeni that would have to be addressed to increase its effectiveness for behaviour change:

- The transmission of text-based information to passive audiences without an element of interactive engagement is likely to have limited the effectiveness of Wazazi Nipendeni in changing behaviour significantly because users did not experience any peer, social, or emotional support when attempting to adopt the advice Wazazi Nipendeni provided. Social support has been shown to be critical in effective behaviour change interventions (especially for breastfeeding and other IYCF practices). Introducing interactive



components into mobile phone-based services (e.g. a well-functioning call centre) and/or human support is likely to increase their effectiveness in decisively changing behaviours.

Other findings regarding the effectiveness of mobile phone-based services to change behaviours include the following:

- While Wazazi Nipendeni provided information tailored to users' specific needs (e.g. stage of pregnancy), the service did not support the generation of an enabling environment that supports parents willing to adopt new practices. To increase the effectiveness of mobile phone-based behaviour change interventions, they could be joined up with other ongoing interventions (e.g. livelihood improvement programmes or social protection programmes) or mobile money services that provide parents with the financial resources to act on the advice (e.g. buying animal-sourced food to feed to their children).
- Mobile phone-based advisory services such as Wazazi Nipendeni are unlikely to be effective as a stand-alone channel for behaviour change – they are likely to perform best when integrated with traditional media and channels as part of a multilevel strategy that conveys the same messages using multiple approaches (which Wazazi Nipendeni already does), as well as with a field presence. Mobile phone-based information could therefore be one part of a broad, many-pronged policy, and not the only component aiming to change behaviours and practices.
- Mobile phone-based information from a source that is perceived as credible (such as the government) can help to enhance mothers' bargaining power in intra-household spending negotiations by convincing fathers to take more responsibility in regard to childcare-related activities. Many fathers were more likely to listen to and engage with such requests from their wives as they perceived the messages to be sent by sources they respected. To further promote this mechanism of change, messages could (gently) promote the use of the Wazazi Nipendeni content in intra-household decision-making processes.



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